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ABSTRACT

This manual was developed as an integral part of an ongoing project on the role of standards in vocational training that was launched by the European Training Foundation in 1995. Revised in November, 1999, this manual reports the results of three meetings that addressed the following subjects: the content of vocational education and training standards; the procedures for their development; and the processes of implementation and evaluation, supplemented by knowledge in comparative research and current trends. The manual, which does not prescribe specific models but offers options and alternatives for the development of vocational education and training standards, is organized in eight sections. Following the introductory section that explains the basis and goal of the manual, section 2 defines standards, a main element in the transformation process of vocational education and training, providing definition, components, and functions. The third section provides aids for the forward shaping of occupational standards, while the fourth section suggests four alternative models for the shaping of standards in vocational education (examination model, occupation model, modular model, and combination occupation model and modular model), and evaluates them. Section 5 suggests the types of experts who should be involved in standard development (team creation), and section 6 sets forth a procedure for the elaboration of occupational standards. Section 7 contains information on implementation, evaluation, and compliance with standards. The final section provides four examples of standard development in vocational training in the Czech Republic, Slovenia, Latvia, and Ukraine. (KC)

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Qualifications and training methods

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MANUAL

Development of Standards in Vocational Education and Training

July 1998 (reprinted with updates 1999)

Volume 1

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European Training Foundation

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MANUAL

Development of Standards in Vocational Education and Training

European Training Foundation, Turin

This Manual was drafted by the **Federal Institute for Vocational Training (BIBB), Germany**, on the basis of the results of three meetings of the European Training Foundation's Advisory Forum sub-group on standards. It therefore reflects the discussions, views and recommendations of the Working Group members. The authors are Dr Margret Kunzmann and Dr Ute Laur-Ernst with the support of Dr Bernd Hoene. It was re-edited in 1999 by Mr. Bob Mansfield of PRIME R&D, UK, in order to take into account new developments in the field.

Foreword

This publication is an integral part of an on-going project on the role of standards in vocational training which was launched by the European Training Foundation in 1995 in the framework of its Advisory Forum. The Advisory Forum, comprising training experts from EU Member States, the partner countries and international organisations, delivers opinions and advice on the Foundation's work programme.

Four sub-groups of the Advisory Forum were established in 1994 to discuss and prepare papers on key vocational training themes. Standards in vocational education and training was identified as one of these.

The selection of this topic responds to the urgent need in many of the Foundation's partner countries for international expert advice on the development of modern, forward-looking vocational education and training standards for skilled employees at intermediate level (skilled workers, craftspeople, qualified employees, skilled service providers).

In Autumn 1997 the European Training Foundation commissioned the German Federal Institute for Vocational Training (BIBB) Berlin, to process the results of the sub-group on standards and present them in the form of a manual. This manual therefore reflects the discussions, views and recommendations of the sub-group members.

Dr Margret Kunzmann, Dr Ute Laur-Enst with the support of Dr Bernd Hoene have prepared the document in line with the work commissioned. Petra Kuschinski designed the graphics while the text was translated by Aileen Sharpe.

The authors themselves prepared and attended two meetings of the Foundation's sub-group on 'standards' and could therefore gain a first hand impression of the discussions and the very different goals and perspectives of the participants. For more than five years they have been dealing with issues of vocational education and training reform in Central and Eastern Europe as well as in the New Independent States and have conducted several consultancy and development projects on questions of standards. Furthermore, BIBB has extensive knowledge of the various models of vocational education and training standards in the Member States of the European Union which the authors were able to draw upon.

The authors would like to thank all the members of the Foundation's sub-group as well as the two chairmen: Dr Hermann Schmidt (BIBB, Berlin-Bonn) for his work in 1995 and 1996 and Mr Bohumil Janys (VUOS, Prague) for his work in 1997. Furthermore we express our thanks to Ms. Aleksandra Joma (Lativa), Mr Bohumil Janys (Czech Republic), Mr Anatolij Simak (Ukraine) and Mr Vladimir Tkalic (Slovenia) for their contributions concerning national examples of standards development and to all other experts who gave additional constructive tips for elaborating this manual. Last but not least a special thanks goes to Mr. Thomas Schröder from the European Training Foundation for his helpful assistance.

Since the first edition was published in 1998, the document has been revised by Mr. Bob Mansfield of PRIME Research and Development Ltd., UK. Mr. Mansfield participated in the European Training Foundation's Advisory Forum as an expert on the topic of vocational standards and he has also been heavily involved in the preparation of volume 2 of this manual. He was asked to update volume 1 in order to make it better reflect recent innovation in the area of vocational standards. This second edition of volume 1 was published in November 1999.

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1. Basis and goal of the manual

The international sub-group "Standards[1] in Vocational Educational and Training" set up by the Advisory Forum of the European Training Foundation met on three occasions in 1995, 1996 and 1997. At these meetings the sub-group addressed the following subjects:

- the content of vocational education and training standards;
- the procedures for their development; and
- the processes of implementation and evaluation.

The results of these three meetings (documented in the "Final Reports" of the chairmen) are the basis for this manual. They are supplemented by relevant knowledge in comparative research and current trends. In the course of the three years - from 1995 to 1997 - the focuses and views of the sub-group members have changed in some cases. This is a consequence of the development process which vocational education and training is experiencing in all countries involved, both in Central and Eastern Europe as well as in the European Union. Given the growing dynamics of change in industry and society, there is a need for reform everywhere.

Against this backdrop this "Manual for the Development of Standards in Vocational Education and Training" is one milestone in a series of publications which the European Training Foundation is planning on this important subject. The discussions are to be continued and further results (e.g. from the new sub-group "Standard 2000") are expected.

The manual has been deliberately designed as a guide which offers options and alternatives for the development of vocational education and training standards. It does not lay down any specific model but rather presents and discusses various versions as was done at the sub-group meetings. The goal of the guide is to inform and support interested parties when it comes to taking the right decisions on formulating or preparing vocational education and training standards for their countries. This is a very complex and crucial task and should be fulfilled in a medium or long-term perspective. The manual will contribute to solving the problems of efficient country-specific standard development in vocational education and training. It will support all those who are concerned in a practical manner.

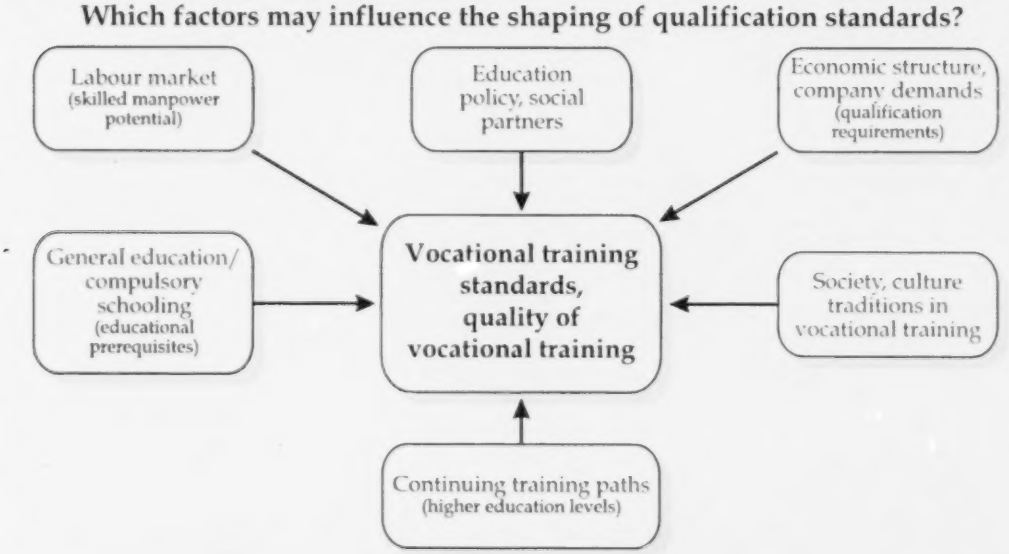
1 In the first edition of the Manual a number of terms were used to describe standards - including 'vocational education standards', 'qualification standards', occupational standards' and 'standards'. Some of these different terms are clarified in Volume 2 of the manual. In this second edition the term 'vocational education and training standard' is used consistently.

2. Vocational education and training standards - a main element in the transformation process of vocational education and training: definition, components, functions

In many countries vocational training is currently undergoing transformation as a direct consequence of fundamental political, economic and social redirection. Efforts are being made to find suitable concepts and approaches to tackle the new challenges. In this context the development of modern, forward looking vocational education and training standards is considered to be very important. The creation of market economy structures in these countries often brings with it increased, and frequently completely different requirements in terms of the general abilities, knowledge and skills required by employers at the intermediate qualification level. These requirements are documented in vocational education and training standards. They are important guidelines for the staging of vocational education and training and they shape the education system. Besides methods for defining content and structure, appropriate methods are also needed for the development and implementation of the new standards.

There are major differences in the way in which vocational education and training standards are formulated in Central and Eastern Europe and the New Independent States just as there are between the Member States of the European Union. Factors such as political goals, economic development dynamics, socio-cultural specificities, and the historical and contemporary framework conditions in a country influence both the defining of vocational education and training standards as well as the methods for putting them into practice (cf. Fig. 1). The full range of factors is shown in Fig 1.

Fig. 1: Factors which influence qualification standards / occupational standards


Which factors may influence the shaping of qualification standards?
Labour market (skilled manpower potential)
Education policy, social partners
Economic structure, company demands (qualification requirements)
General education/ compulsory schooling (educational prerequisites)
Vocational training standards, quality of vocational training
Society, culture traditions in vocational training
Continuing training paths (higher education levels)

The quality of standards largely determines the quality and effectiveness of a training system. Hence, it is not easy to decide which of the possible models for standard design and development is best suited to a specific country. Various factors and needs have to be weighed up if at all possible within a long-term perspective.

First of all there must be clarity about what is meant by vocational education and training standards and what functions they are to assume. This was also the first step of the Advisory Forum sub-group.

In principle the concept of "standards" already exists in the vocational training systems of all the countries involved. Prior to political and economic reform in Central and Eastern Europe, vocational education and training was certainly 'standardised', even if it was not based on what we know understand as vocational education and training standards.. Hence, in principle, it was relatively easy to agree on the following general definition.

What do we mean by a vocational education and training standard?

★ *Vocational education and training standards describe the work tasks to be carried out within the framework of a specific occupational activity as well as the related knowledge, skills and abilities. Standards are compulsory for all those involved in vocational education and training*

Following on from this general definition, the next step involved examining the question in even greater detail:

What does a vocational education and training standard include?

★ *The sub-group agreed on the following components:*

(1) Occupational profile/training or task profile, which describes which group of work activities must be undertaken in what manner (e.g. independently or according to instructions) if one wishes to successfully pursue the corresponding occupation or activity;

(2) Assessment requirements, which lay down which tasks are to be undertaken at the end or in the course of training and what minimum level of knowledge and skill must be demonstrated

(3) Entry requirements which stipulate which education certificate/competence must be held if one wishes to start the corresponding education course (educational prerequisites) In some countries, e.g. Germany and the United Kingdom, there are no formal entry requirements;

(4) A curriculum and syllabus which describes the learning goals, the theoretical and practical knowledge to be taught as well as the structure and length of individual sections and the overall training course.

These four components were particularly emphasised by all members of the sub-group. In addition, some indicated that in their countries, information was also included about the learning and teaching aids to be used and the didactic methods to be applied in the vocational education and training standards or that this information was to be included in future. There were also plans to stipulate the qualification level of the teachers/trainers.

Fig. 2 presents the weighting of the individual components by the members of the sub-group[2].

Fig. 2: Components of a qualification standard

What should qualification standards specify?

- ✓☑✓ Occupational profile/training, task profile
- ✓☑✓ Examination requirements
- ✓☑ Entry requirements
- ✓☑ Curriculum: contents, structure and length of training
- ☑ Methods and learning aids
- ☑ Qualification level of the training staff

? *Would you attribute the same importance to the individual components?*

→ As already mentioned, some countries would like to go beyond the four important components mentioned above and include even more in the vocational education and training standards. One example for this is the proposal from the Ukraine (from 1995), cf. Fig. 3 below:

Fig. 3: Additional information in occupational standards

An elaborated vocational training standard specifies:

- qualification level
  (occupational characteristics, competence profile)
- training content
  (curriculum)
- training length
- control system
  (examinations, standardised time schedule)
- teaching and learning aids
- materials and technical equipment
- qualification requirements for teaching staff

2 Number of ticks indicates weighting.

What functions do vocational education and training standards have?

★ *The sub-group agreed on three functions:*

1. Assuring the quality of vocational training

Standards determine the quality (the level) of vocational education and training and contribute considerably to this quality being upheld. They are state-recognised and important benchmarks for quality.

2. Guaranteeing transparency

Standards make the goals, content and required level of training visible and verifiable. This is just as important for training staff as it is for trainees or apprentices. The potential employers of vocational training graduates on the labour market are also interested in transparency. They want to know what the applicant has learned.

3. Ensuring the certificates are comparable

Where standards are mandatory, everyone must comply with them. Hence it can be assumed that the certificates and, by extension, the level of skill reached, are comparable irrespective of the school/training institute or training company in which someone has acquired them.

➜ In addition to these main functions, state-recognised standards are also the precondition in some countries for:

- **Appropriate wage/salary classification** (e.g. Ukraine, Germany, Sweden).
- Entitlement to financially backed retraining (e.g. Latvia, Luxembourg), the securing of a pension in the case of occupational disability (Ukraine) or a suitable level of pension (Latvia, Lithuania).

Amongst other things, it will depend on the economic development in a country whether and to what extent these additional functions are included.

How mandatory should vocational education and training standards be?

➜ The scope of standards can be regulated in different ways. The following alternatives are possible:

a) National, nation-wide mandatory character (e.g. France)

b) Regional mandatory character (e.g. in large area countries with very differently structured regions such as Poland or the Russian Federation).

c) Sectoral, branch-specific mandatory character (e.g. Netherlands)

d) Special "chamber regulations" which are only valid for the chamber district.

? *How would you answer this question for your country?*
What scope should vocational education and training standards have in your country?

➜ The mandatory character could vary within a vocational education and training standard. For instance part (e.g. 70% of a vocational training programme) could be mandatory nation-wide whereas the remaining 30% could be flexible - to be shaped according to the regional economic structure or the labour market situation. Combinations of this kind are growing in importance in order to be able to react flexibly and in a differentiated manner to a broad spectrum of requirements.

★ *The majority view is that vocational education and training standards should be mandatory regulations which have legal force.*

In the opinion of the sub-group the state can play a major role in the development and recognition of vocational education and training standards. It also bears responsibility for compliance with them. This sole responsibility of the state has been 'relativised' in many EU Member States by the involvement of the social partners (employee and employer organisations). In Central and Eastern Europe too, consideration was already being given in 1995 to involving the social partners (initially the chambers and trade union associations) to a greater degree and giving them more responsibility. However, putting this intention into practice is proving difficult in many countries because they do not have the necessary corresponding organisations, institutions or regulations. Moreover, when they do exist, practical involvement is not always possible since, for instance, neither the employers' associations nor the trade unions may have people with the right capabilities.

For how long should standards be valid?

It used to be very easy to answer this question. As a rule they were defined for long periods (15 to 20 years). Today however their validity is shorter as knowledge becomes outdated due to rapid changes in industry and the world of work, in technology and work organisation. In order to provide vocational education and training which is relevant to technological and economic development, it is necessary to repeatedly and constantly revise and update the standards. This affects their content and development opportunities. In recent years there has been increasing discussion of the advantages of a modular structure for training courses. Single, curricular modules, it is argued, are easier to replace (cf. also Chapter 4, p. 11).

What can standards be used for?

Fig. 4 shows that the standards intended for formal education and training can also be used as the benchmarks for competence obtained outside the education system. This is one use to which they are put, in particular in those countries in which large groups of the population have not received any recognised vocational education or training. However, in order to demonstrate their competence (skills, knowledge) they can participate in an assessment against the criteria of the official standards. This can show the level of occupational skills they have acquired, irrespective of how they have obtained them.

In future this use of standards will take on even more importance since a change in work and occupation is becoming increasingly necessary and completely new training for this is not always possible. Recognising existing competence through the 'accreditation of prior learning' (APL) may increasingly be used.

Fig. 4: Standards as a benchmark

... for competence obtained outside the education system

For instance through:
- work experience
- self-instruction
- earlier education and other forms of qualification

3. Aids for designing vocational education and training standards to anticipate future needs

As already demonstrated in the previous section, vocational education and training standards need to be constantly updated, in some cases fundamentally revised or even completely redeveloped. Known, established occupations and activity areas are disappearing from the labour market. They are being replaced by new occupations and competence requirements. Some activities have to be carried out with new technologies (new machines, control systems, information technologies) which are quite different from before. Work activities are being organised and combined in completely different ways in companies. Certain products are no longer being manufactured, new products are now on the market and there are demands for completely innovative services. As a consequence, existing standards need to be revised and, in some cases entirely replaced to meet both emerging demands and anticipate new demands.

Many countries in Central and Eastern Europe are experiencing a fundamental restructuring process in which economic development is still highly uncertain. They face a very difficult problem: how should vocational education and training standards be formulated (content, length, level) if it is difficult to predict which areas of the economy are going to expand and what demand for competence is going to emerge within the labour market Within this uncertainty they have to decide what kind of training should be given to young people. The representatives of the partner countries in the sub-group came back again and again to these difficulties. They cannot simply wait for new demands to emerge and not develop standards , nor can they rely on the old ones. This would mean neglecting an important area of education. So a "first choice" must be made and a sound decision taken in the full knowledge that the correspondingly may have to be revised or even replaced after only a few years. That is almost unavoidable.

Under these particularly difficult conditions, but also in principle in all countries because of the high dynamics of change in the economy and society, the development of vocational education and training standards must be seen as a continuous process of "adaptation and optimisation ". In order to make this process as effective as possible, various instruments and aids can be used. Here are a few suggestions:

- reference to the vocational education and training standards from other countries which have a similar tradition of vocational training and where comparable economic structures and education policies are to be found (e.g. craft trade training in the Czech Republic and Germany; in-school vocational education in Poland and France);
- orientation towards European profiles like that compiled by CEDEFOP;
- identifying the main development/reforms in training policy and practice in the last five to ten years in countries which have relevance to one's own country;
- taking into account the results of international studies on future (global and country specific) economic development and labour market demand as well as gradual establishment of one's own research and monitoring in order to systematically record these changes for one's own country;

- analysing different models of standards as applied, for instance, in the European Union and assessing the advantages and disadvantages against the background of one's own situation;
- guaranteeing sufficient openness and flexibility in the development of standards from the very outset in order to be able to react more effectively and rapidly to change (e.g. besides generally mandatory sections, there should be scope for modifications to be made to meet regional or company specific qualification requirements. Alternatively the emphasis should be on developing broad rather than narrow occupational competence).

Which instruments/aids are effective and useful in your opinion?
What would you recommend?

In order to develop standards in an appropriate and country specific manner, which also reflect European or global trends, each country needs a research institute which addresses this task in a systematic and ongoing manner and ensures that the social partners, experts from companies, training practitioners and trainees as well as competent scientific experts are involved in the development process. Their experience, perspectives and goals need to be taken into account in order to achieve a reasonable balance between the requirements and interests of the different social parties.

4. Alternative models for the development of standards in vocational training

The development of standards for vocational education and training is a complex process which requires decisions to be made about a whole series of characteristics and dimensions. Answers must be found to questions such as:

(1) Should only the **goals and results** of the educational process (the outcome) be documented in the standard or should the **teaching and learning process** used to achieve the outcome be described as well (i.e. an 'input' plus 'outcome' model) -?

(2) Will the standards define only **occupational and technical skills** or are they also to include general education and **personality development**?

(3) Should real **occupational competence** ("Handlungskompetenz") be acquired and described or should **basic technical knowledge** be learned?

(4) Do the standards refer to individual **work tasks** or to a whole package of activities which together constitute an **occupation**?

(5) Is a decision being taken in favour of **several** separate specialised occupations or for a few **broadly based occupations/qualification profiles**?

(6) Within vocational training are **different levels** defined or will there just be **one certificate** of the same level for everyone?

Given its complexity, this decision making-process could not be systematically addressed during the three meetings of the sub-group. The level of knowledge and the ideas about training in the countries concerned were too different or, more particularly, not yet clear enough in several partner countries. For that reason discussion focused (in 1995) on three conventional basic models of standards in Europe as the introduction point to this complex area. The focus was on:

1. **The assessment led model** (e.g. in the United Kingdom, National and Scottish Vocational Qualifications, NVQs and SVQs):
2. **The occupation model** ("Berufskonzept" e.g. in Germany, Denmark and (partly) in the Netherlands and in apprenticeship training in France).
3. **The modular model** (e.g. The Netherlands and widely used in continuing training in many EU Member States, represented by ILO).

These three basic models are to be found in school-based training systems as well as in "dual systems" where vocational schools and enterprises are involved in vocational training. In some countries these models are to be found in parallel to each other. Furthermore, there are various combinations of these three approaches.

Fig. 5 on page 13 gives the structure of the three models. Let's examine their typical characteristics more closely as well as their respective advantages and disadvantages to the extent that they were raised by the sub-group.

4.1 The assessment led model - an outcome based model[3]

Characteristics (note, the characteristics which follow are taken from the United Kingdom's system of National and Scottish Vocational Qualifications[4] *- NVQs and SVQs):*

(1) The standard to be achieved is described as a number of performance criteria, together with the knowledge and understanding which underpins performance. Each of the criteria and the knowledge are assessed

(2) NVQs and SVQs are assessed by gathering evidence of a candidate's performance (what they can do) and knowledge (what they know). Evidence of performance will consist of things the candidate has produced and observations of the candidate - either at work or an approved training centre. Evidence of knowledge may be obtained by questioning the candidate, by setting projects and assignments or by administering written tests.

(3) The learning process itself, i.e. the content, duration and entry requirements, are not specified in an NVQ. There are no specifications describing how skills should be acquired, the knowledge input, or the duration of learning. The model is expressly oriented towards outcomes and is designed to offer for flexible methods of delivery.

(4) Learning may be delivered in colleges, training centres or through open and distance learning - to meet different needs. The precise methods are not prescribed by the two regulating authorities, The Qualifications and Curriculum Authority (QCA) and the Scottish Qualifications Authority (SQA), but they are regulated by national Awarding Bodies and a number of national quality assurance agencies. Attending a learning programme is not compulsory. Candidates who have the required competence can apply for assessment directly.

One major **advantage** of this model is that it does not require a centralised, national consensus on the syllabus and learning process - so it can save both time and public funds. Candidates are responsible for choosing a learning route, with appropriate guidance, which is most suitable for them. Training providers develop curricula which meet the specifications defined by the vocational education and training standards and which allow flexible delivery. The assessment of the outcomes of learning, which is regulated by accredited awarding bodies, and provided by qualified assessors, provides national quality assurance.

The main **disadvantage** of the assessment led model is the lack of transparency about the knowledge to be tested. Detailed records are maintained about performance assessment - but not about the assessment of underpinning knowledge. The content of the learning programme is not explicit and the degree and level of knowledge which has been acquired is uncertain. This can cause difficulties in matching the achievement to the requirements of higher level qualifications - although in the UK the NVQ system has gained acceptance as entry qualifications to higher levels - including university entrance and other professional qualifications.

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3 In the first edition of the Manual, the word 'examination' was used to characterise the UK system of NVQs. This is not strictly accurate. In the UK, the word 'examination' is usually taken to mean a formal test of knowledge conducted under strict examination conditions in an education institution. This is not the way in which NVQs are assessed. The European Training Foundation has agreed on the term 'assessment' to replace 'examination'.

4 Note: In the United Kingdom the term 'qualification' also means the certificate which people receive.

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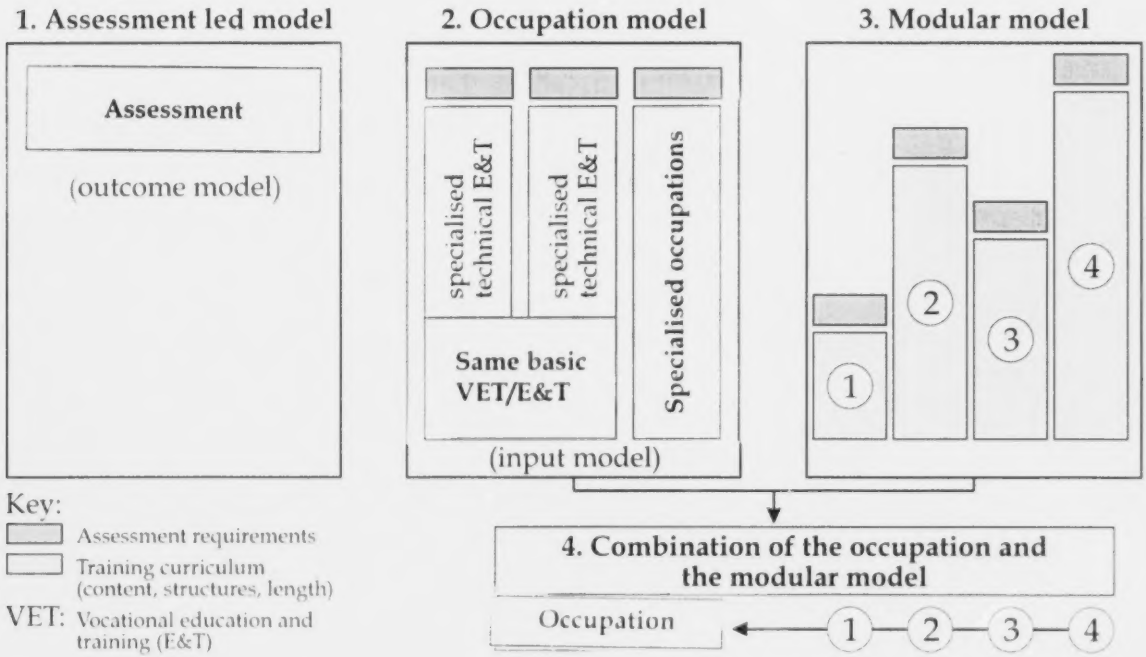
Another claimed disadvantage is that the only mechanism for quality assurance of the programme is within the assessment process. Whilst this is essentially true, there are two factors to be taken into account. The first is that other national agencies independently quality assure the quality of institutions and workplaces used to support learning and assessment. This is not part of the NVQ and SVQ system per se - it is a separate function. Second, the fact that the maintenance of quality depends almost entirely on the assessment process is reflected in the fact that most of the quality assurance resources are directed at this activity. The 'assessment specification' is agreed nationally and is an integral and mandatory part of the standard. Assessment instruments are developed by the awarding bodies to assure consistency. Assessors must be trained and certified, and assessments are checked by both internal and external verifiers - who are also trained and certified. Assessors are based at a recognised assessment centre which is also quality assured by the awarding body for which the centre offers certification.

Fig. 5: Models for vocational education and training standards



Do you share these views of the advantages and disadvantages of the examination model?
Do you know of any others? How would you argue?

So far this examination model has not been used in Central and Eastern European countries - although the experience of Latvia has some similarities. Most EU Member States do not have a primarily outcome-oriented model either. That does not mean that for them the outcome is irrelevant, quite the contrary.

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4.2 *Occupation model - a process-oriented input model with outcome control*

Characteristics:

(1) The focus is on the concept of a training occupation in which specific tasks as well as the related knowledge, abilities, and skills are pooled. They make up the occupational and requirement profile.

(2) The goal is the acquisition of holistic, occupational competencies through which the young person or adult can assume a whole range of jobs in the labour market. Standards according to the occupation model maintain a balance between in-company demands and general educational or general vocational competencies which can help to develop individual character.

(3) The content, organisation, duration of the shaping of the teaching-learning process are laid down. Timetables or curricula structured according to time and didactics are prepared and everyone who runs vocational training must comply with them. Furthermore, some countries give details about the training level (the certificates) of teachers and trainers as well as about the quality of the training institute (including facilities). The main points of input are described; the teaching and learning processes are not flexible.

(4) Furthermore, the assessment requirements are formulated and the assessment format is laid down (e.g. proportion of oral and written assessment/practical work samples). As a rule the assessment process refers to the overall skills to be acquired. The occupation model can, therefore, also be described as output oriented.

(5) As a rule the entry requirements to vocational education and training are stipulated (e.g. necessary certificates) and hence a pre-selection made.

The following should also be borne in mind:

Under the occupation model, standards may be broadly based or highly specialised. They may describe common basic training for several occupations which are then distinguished in terms of content on the next level or may refer throughout to one occupation (mono-occupation).

In European countries we can observe a considerable degree of variation within the occupation model which mirrors different traditions and vocational training policies. In many cases we find very extensive basic training which accounts for up to 75% of the training content whereas the technical specialisation is a smaller part of the final training section.

A further alternative involves the actual practical vocational specialisation in the occupation being undertaken in an informal manner on conclusion of school training or in a formal manner as continuing training in the company.

Typical example in the EU:

Vocational education and training for instance in Denmark, Germany or Austria is largely based on the occupation model. The standards are developed in co-ordination with the social partners. The typical work tasks/activities of the relevant occupation are laid down and the related competence requirements are described (including "key skills"). The competencies required to pursue an occupation are presented in greater detail in the training framework plan and school curriculum with regard to subjects and schedules. Precise details are given of the assessment requirements.

NB: changes here too!

The standards based on the occupation model which were previously defined in a quite uniform manner are today far more differentiated. The following overview of older and more recent alternatives illustrates this:

(1) Common basic training for several occupations (in the first and second training years) on which specialised technical training builds (in the third year).

(2) Standards for individual occupations (so called "mono occupations").

(3) "Basic" or "core occupations" which each refer to a group of related specialised occupations (the horizontal axis) and which are defined on different levels (the vertical axis: semi-skilled workers, skilled workers, technicians, masters).

(4) The vocational education and training standard encompasses a core curriculum as the main compulsory part of vocational education and training. It is supplemented by a specific supply of "compulsory modules" which gives some scope for choice and/or there are in addition freely selectable modules for especially interesting qualifications.

The sub-group stressed above all the holistic approach and the extensive competencies acquired as the main **advantages** of the occupation model. It takes in normal, basic but also specialised technical knowledge and supra-occupational "core/key skills" (e.g. an ability to co-operate, information and communication skills, a readiness for innovation, an ability to learn, lateral thinking). Besides the acquisition of occupational skills, personality development is supported. The graduates from vocational training of this kind have broad and flexible competencies. Furthermore, transparency is guaranteed as is a sound basis for ongoing continuing training.

The **disadvantage** is that the development of new standards in accordance with the occupation model means considerable investment of time and manpower. Germany in particular was mentioned as a problematic example. This is however no longer the case since in the last few years standard development in Germany for new occupations has not taken more than one to one and a half years. It is not the occupation model which is the decisive factor for the necessary time but the procedure and commitment of all those involved. Also the problem of horizontal grouping (occupational families) and vertical (levels) distinction of occupations is to be tackled. This is a very important issue which requires considerable co-ordination which can be both complicated and time consuming. (But co-ordination of this kind is also linked with the examination and the modular model.)

How do you assess the comments made about the occupation model?
Do you see the same advantages and disadvantages or do you have any to add?

It should be borne in mind that traditionally the occupation model was predominant in Central and Eastern European countries even if the occupations themselves were highly specialised.

Between the beginning and mid 1990s the development and updating efforts prompted critical comments in many countries about the suitability of the occupation model and a shift towards the "modularisation" of training courses. People thought that this was the solution but there is emerging research which suggests that this approach can have problems of its own.

4.3 *Modular model - example: learning module*

Modules may be used as **assessment units** (only related to output) or as learning units (additional details of content - input). They may be very narrow and highly specialised or may be broadly defined taking in several activities. In principle there is a great deal of diversity. In the following we only refer to the "learning modules" (not to assessment units). They were to the fore in the sub-group.

Characteristics:

(1) The starting point for standard development are specific work activities which are described and the skills and knowledge required are listed.

(2) The assessment requirements refer to these (partial) competencies. If the requirements are met, a corresponding certificate is issued'and this confirms that the holder may undertake the relevant work task/activity.

(3) Details are given of the learning goals, content and, in some cases, of the entry requirements. Moreover, there are recommendations on the combination and on the suitable didactic sequence of learning units.

The **advantages** of this model are that the units are smaller (than in the case of the occupation model), training is correspondingly shorter, the module is better tailored to the different performance level/willingness to perform of the young people and adults and modules can be adapted more quickly to company and labour market requirements. It is easier to update or replace modules. Their greater flexibility is stressed. More recent studies, however, indicate that there are far greater problems in practical implementation and module combination than initially expected.

The **disadvantages** of the modular model which were stressed were the "isolation" of each module and the lack of coherence of the individual competence. Without a supra-ordinate complex learning goal, the modules will be unrelated to each other, and holistic competence cannot be developed. The ease with which modules can be combined brings with it further problems because it is almost impossible to say with any degree of reliability which combinations industry will require - not only at present but in the next two to three yearsThere are also didactic and learning organisation difficulties. Furthermore, there is a risk that "narrow track training" is undertaken in as short a time as possible with all the ensuing negative consequences for lifelong learning and employment.

Do you agree with these advantages and disadvantages?
Is there a need for greater differentiation?

Just like the "occupation model", which has been considerably developed in recent years and better adapted to the new requirements in many countries (e.g. the Netherlands, Austria, Switzerland), improvements have also been made to the "modular model". For instance there has been greater pooling of modules to form more complex qualifications in order to ensure that on completion of a module combination, broader skills have indeed been acquired. These changes were taken up and discussed by the sub-group in 1997. A compromise had already been proposed in 1995, i.e. a combination of the occupation and the modular model. This is increasingly attracting attention and already being partly implemented in those countries which traditionally use the occupation model.

4.4 *Combination of occupation model and modular model*

Characteristics:

(1) The starting point is the description of an occupation i.e. an extensive task/activity profile (cf. 4.2) including the necessary knowledge, skills and "key skills".

(2) The learning modules are developed from this occupation description. The overall occupational competencies are broken down into well rounded, partial qualifications (modules) which are inter-related in terms of content.

(3) Partial curricula are developed for specific task sets/activity areas. The task sets are grouped into sets which have meaning in employment terms (the 'work logic') and which also provide convenient groupings for learning purposes (the 'learning logic').

(4) The combination model is input-oriented and endeavours to avoid interruptions in the learning process.

(5) The assessment requirements in this model refer to complex training sections. A step-by-step acquisition and specification of the occupational competencies is possible as well as a final overall assessment. There was a considerable controversial discussion about this topic.

A typical example in the EU: the Netherlands

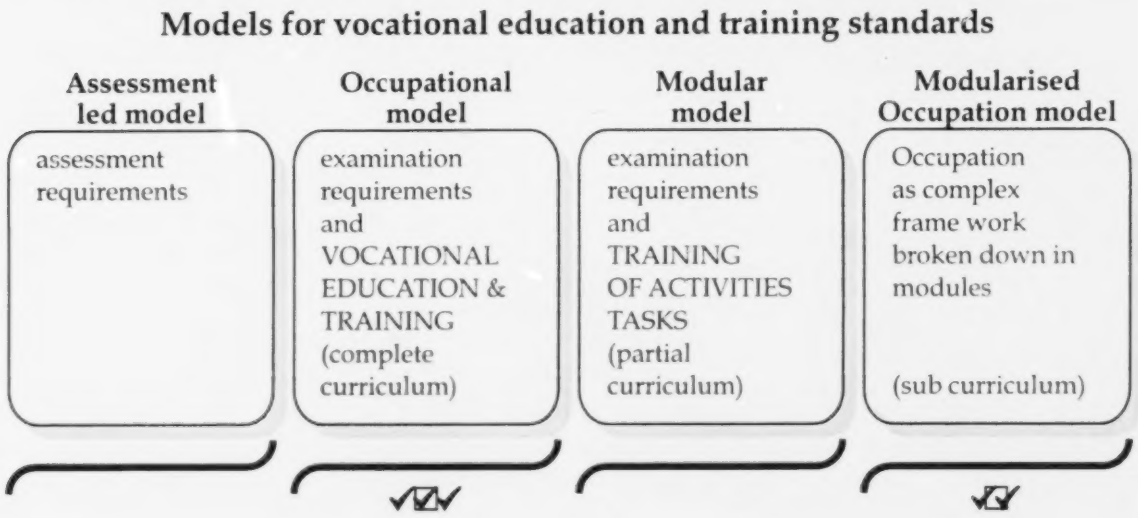
? *What do you think of this combination?*
Does this constitute progress?
What could be the disadvantages of a "modularised occupation model"?

4.5 *Initial evaluation and trends*

The members of the sub-group voted (in 1995) on their preferred model for standards in vocational training. There was a clear majority in favour of the "occupation model" (cf. Fig. 6, p. 18).

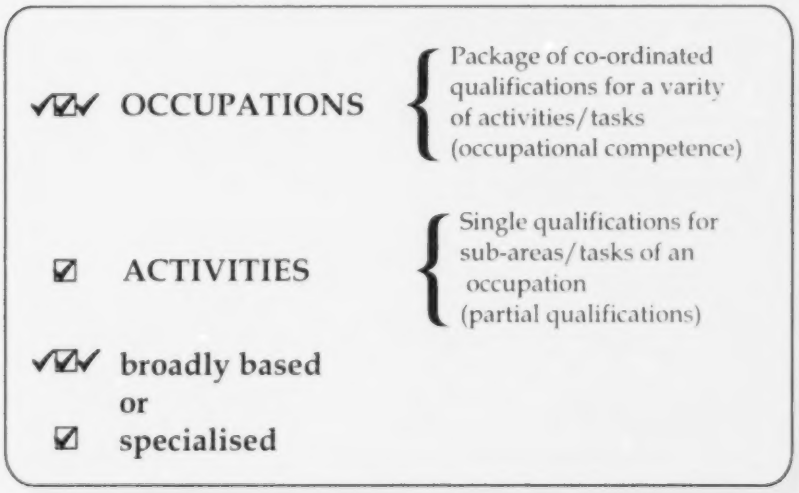
The "assessment led model", which is solely based on the outcome and does not regulate either the content or the organisation of the teaching-learning process, did not generate a positive response. A purely "modular model" was also treated with scepticism whereas a whole number of votes were cast in favour of a "modularised occupation model" to be interpreted as an interesting alternative worth reconsidering.

Fig. 6: Preferences for models for vocational education and training standards


Models for vocational education and training standards
Assessment led model
assessment requirements
Occupational model
examination requirements and VOCATIONAL EDUCATION & TRAINING (complete curriculum)
Modular model
examination requirements and TRAINING OF ACTIVITIES TASKS (partial curriculum)
Modularised Occupation model
Occupation as complex frame work broken down in modules
(sub curriculum)
✓☑✓
✓☑

Hence, there was a clear preference for standards oriented towards overall occupational competencies (and not just individual activities). The majority was in favour of broadly based occupations rather than highly specialised ones which were only suitable in specific cases (cf. Fig. 7).

Fig. 7: Content of qualification standards


What should qualification standards refer to?
✓☑✓ OCCUPATIONS
Package of co-ordinated qualifications for a varity of activities/tasks (occupational competence)
☑ ACTIVITIES
Single qualifications for sub-areas/tasks of an occupation (partial qualifications)
✓☑✓ broadly based
or
☑ specialised

In recent years, many partner countries have tried out different paths for the development of standards and have endeavoured to reconcile experience in other European or non-European countries (e.g. USA, Canada, China) with current national vocational training policy. The examples from the Czech Republic, Slovenia, Latvia, and the Ukraine (cf. section 8) show the decisions taken in these countries.

5. Experts involved in standard development (team creation)

When developing vocational education and training standards, irrespective of the model on which they are based, there are a number of critical factors which considerably influence the quality, acceptance and enforceability of standards. They include:

(1) recognising the actual and future competence needs of industry and the educational behaviour of young people;

(2) the structuring of occupational families or groups of modules modular pools and the vertical classification (levels) of standards;

(3) bearing in mind regional specificities whilst, at the same time, guaranteeing national common features;

(4) the people responsible for the development and issuing of vocational education and training standards and the composition of the expert team which develops the standards. This last point was extensively discussed in the sub-group.

★ *Given the complex nature of the development process, the* ***creation of a team*** *and agreement on a* ***procedure*** *which will guarantee the* ***positive interaction*** *of all those concerned are recommended. Regulations are to be agreed for this at the national level. This has already been done in some Central and Eastern European countries, whilst others are still in the test phase.*

The specification of the group of people to be involved in the development of new or the updating of existing vocational education and training standards and the responsibility for the initiation of this process is of major importance. This is because the development process aims to achieve, a consensus on the goals, content and length of training in order to increase the acceptance and enforceability of the standard in daily practice.

➜ The development team ("specialised occupational committee"), must represent a high level of relevant expertise and knowledge of the world of work and reflect the different views/interests in order to ensure that the standard is well balanced

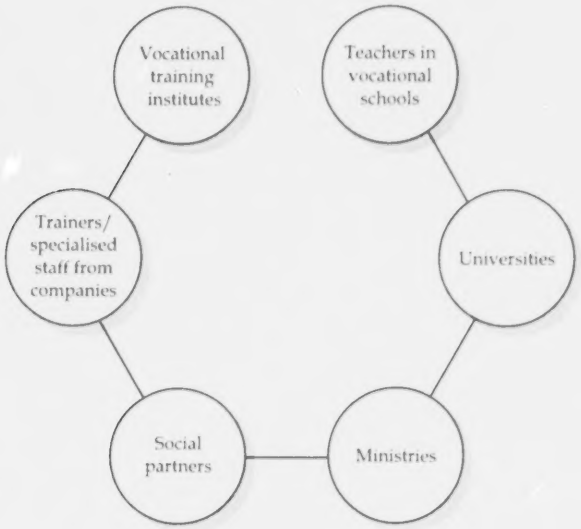
The following experts should be involved in the development of standards (cf. Fig. 8, p. 20):

- experts from the national vocational training institute/methodological centre for vocational training
- teachers from vocational schools
- trainers, occupational experts from companies
- scientists from the relevant disciplines
- representatives of employer organisations and employees (social partners)
- representatives of the responsible departments in the relevant ministry.

? *Would you be in favour of a composition of this kind?*
Is this in your opinion a desirable but impracticable solution?
What would you recommend?

Fig. 8: Composition of th team responsible for standard development

Who will actually be involved in standard development?



mixed teams
specialised occupational groups

According to the national representatives in the sub-group, vocational school teachers (trainers) and, to differing degrees, experts from universities, research institutes and plants have traditionally been involved in many partner countries. Frequently, however, these teams were appointed centrally and all countries (e.g. in the former Soviet Union) had to take on board the standards which had been developed by distant central agencies They will now assume this task specifically for their countries or at least try to develop comparable standards for a group of countries with similar political and economic conditions.

The development process was usually headed by the ministries responsible for vocational education and training (mainly the ministry of education). In conjunction with the transition to a market economy and bearing in mind the future co-operation with Member States of the European Union, the participation of the social partners in standard development is growing in importance. This is recognised and mostly accepted but, as already mentioned, many problems must be overcome to reach this objective. Interim solutions must, therefore, be used.

➜ There are **positive examples** in Hungary, the Czech Republic and Slovenia (cf. section 8) where rules of this kind have already been introduced. "Specialised occupational committees" are being set up to draw up new or update existing vocational education and training standards. The tasks, responsibilities and working conditions of these committees are clearly laid down. An advisory and expert committee supports the decisions of the responsible ministry when issuing new standards.

6. Procedure for the development of vocational education and training standards - an explanation of the different steps from the initiative up to completion of a new standard

The sub-group has elaborated an "ideal" procedure for the development of a standard by examining the experience of all those concerned. Some countries have already successfully tested this procedure and, where necessary, adapted it to specific national conditions and current tasks (redevelopment, upgrading or partial additions).

★ *What procedural steps are recommended for the development of a vocational education and training standard?*

Please refer in this context to Fig. 9, page 23.

Explanations of the individual steps:

(1) Initiative: The **initiative** for the development of a new standard or the updating of an existing standard may come from vocational training practice (schools, companies, training centres), from representatives of industry, vocational training research, labour market and economic research or from the state (Fig. 10, p. 24). Everyone concerned can become active and present a need for innovation. Applications are submitted to the ministry responsible for standards development.

(2) Decision: The **evaluation** of the application and the **decision** about development or updating a standard is taken by the ministry concerned. In many countries this is the ministry of education (sometimes in co-ordination with other ministries) and, in other cases, it is the ministry for economic affairs or labour which is responsible.

The evaluation takes into account the content, labour market significance, collective bargaining, educational and political aspects (e g. comparison with other qualification profiles and levels, wage/salary structure).

(3) Commission: A **development team is then commissioned** which either already exists (standing specialised occupational committee) or is appointed for a specific case. As a rule, the national research institutes for vocational training are commissioned to input research findings (as a scientific basis), to co-ordinate the work, to supply additional information in the case of differences/lack of clarity and to record the entire process.

(4) Preparation: **Analyses** on the micro and macro levels are undertaken at the beginning of the **development process**. They include national economic/economic structural (sector) studies, studies in enterprises on the use of technologies and work organisation in order to identify competence requirements which are forward looking. Furthermore, workplace analyses (process analyses) are undertaken. The comparison of occupational profiles and curricula on the national and European level is a further source of information.

The difficulties involved in reliably forecasting competence requirements in transforming economies (and not just there) are well known. Nevertheless, methods and instruments must be developed in order to obtain the necessary data and, if possible, guarantee that the competencies/requirements laid down in the vocational education and training standard correspond to the real (at least medium term) demands of companies. Failing this, training will not be in line with needs, so courses and practical periods of training will have to be offered at a later date, producing additional costs in order to ensure that the graduates from vocational training can be effectively incorporated into the world of work.

The following sources/materials can be used in standard development:

- A country's own empirical skills studies (on the macro and micro levels)
- Surveys of teachers, trainers, educational scientists/occupational scientists
- Results of international studies on economic developments
- Standards/curricula of major industrial nations (reference countries).
- Work on qualification profiles by CEDEFOP, ILO, European Training Foundation (in future).

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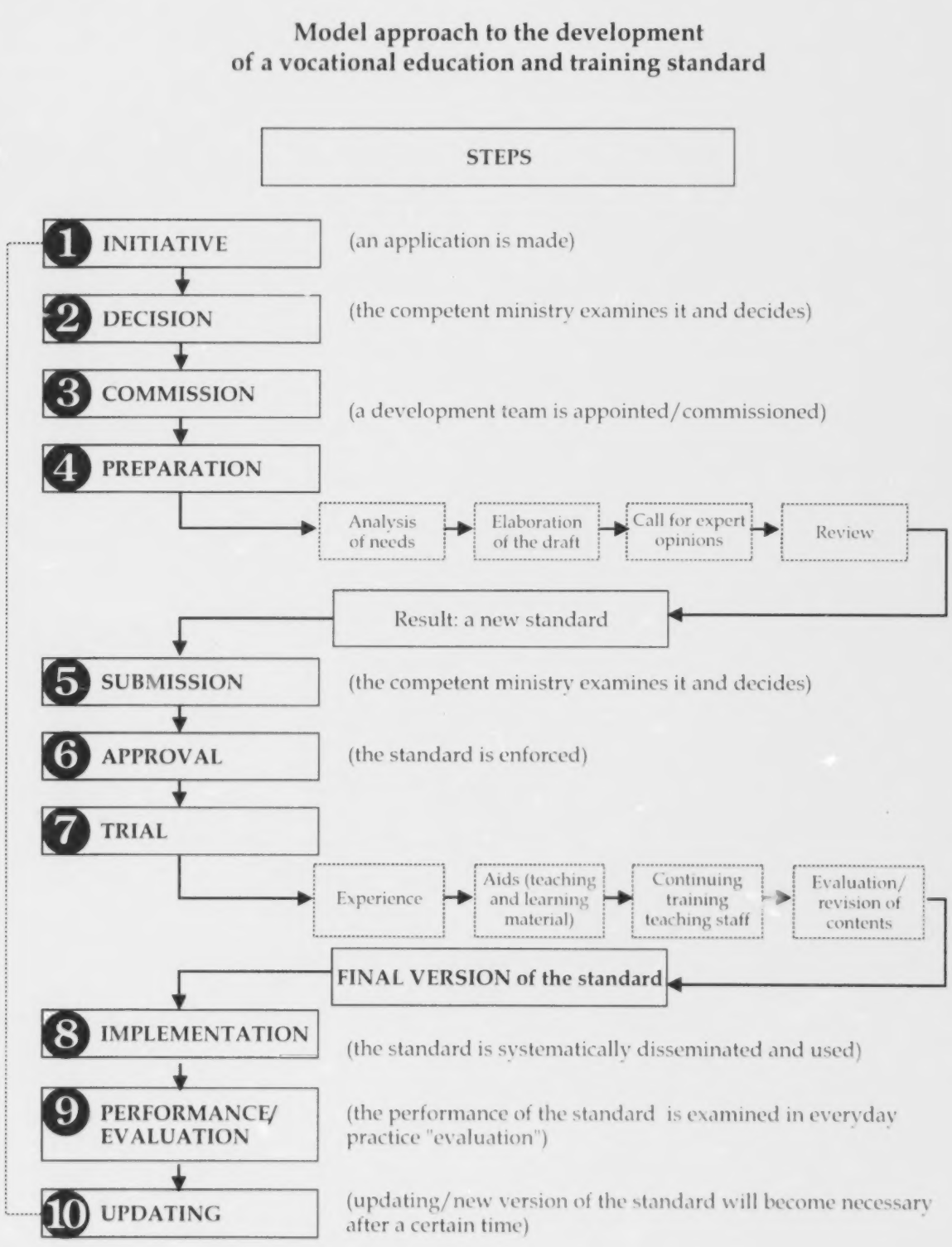
Fig. 9: Steps in the development of a vocational education and training standard


Model approach to the development
of a vocational education and training standard
STEPS
1 INITIATIVE
(an application is made)
2 DECISION
(the competent ministry examines it and decides)
3 COMMISSION
(a development team is appointed/commissioned)
4 PREPARATION
Analysis of needs
Elaboration of the draft
Call for expert opinions
Review
Result: a new standard
5 SUBMISSION
(the competent ministry examines it and decides)
6 APPROVAL
(the standard is enforced)
7 TRIAL
Experience
Aids (teaching and learning material)
Continuing training teaching staff
Evaluation/ revision of contents
FINAL VERSION of the standard
8 IMPLEMENTATION
(the standard is systematically disseminated and used)
9 PERFORMANCE/ EVALUATION
(the performance of the standard is examined in everyday practice "evaluation")
10 UPDATING
(updating/new version of the standard will become necessary after a certain time)

A choice must be made at the beginning of development work between procedure (a) or (b):

(a) Should a standard for an **individual occupation** (qualification profiles/modules) be developed without considering the context?

Advantage: Rapid solution, little effort required.

Disadvantage: Isolated solution with ensuing problems of classification in the occupational families/area of activity or

(b) Should standard development be **context oriented** taking into account (where appropriate by redefining) an entire sector/occupational area?

Advantage: Holistic solutions, integrated procedure, harmonised occupational profiles/qualification profiles.

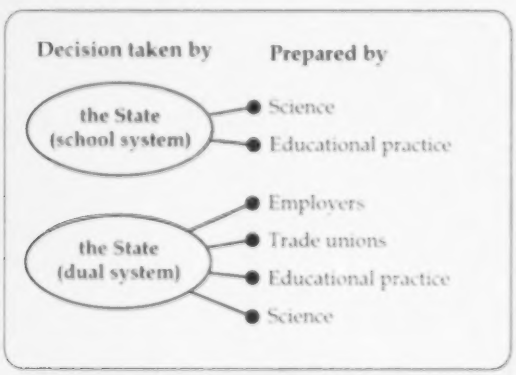
Disadvantage: Considerable effort required.

(5) **Submission:** Once a draft standard has been produced, expert opinions are normally requested and supplementary discussions undertaken with experts and practitioners. An initial review is normally undertaken on the basis of these results. The outcome **is submitted** to the responsible ministry for the next step: the official recognition of the "new standard".

(6) Approval: The state (represented by the competent ministry) takes **the decision to approve** and issue the vocational education and training standard. In many countries of the EU the social partners must agree. In Germany for instance there must be consensus at political level between the social partners on the standard before the state can formally enforce it. (Fig. 10 below).

In order for the standard to become effective, all the parties concerned (schools, companies, centres) must be informed rapidly and extensively. For this, there are normally official organs (official gazettes) but in most cases additional steps must be taken to ensure that the information reaches everyone as quickly and accurately as possible.

Fig. 10: Decision makers behind the standard development



This also applies to career guidance centres and general education schools, whose graduates are planning to go on to vocational training. Of course, the chambers must also be involved in this information process when it has to do with "dual vocational training". Particularly when it is a matter of extensive innovation (e.g. a completely new occupation, innovative qualification profiles/modular package), there is a need for good, convincing dissemination of the new standard.

Preparations for testing the new standard must be undertaken in parallel. Testing will cover the content, the training organisation and the necessary facilities (e.g. equipment for training institutes with new experimental facilities, model machines or learning offices).

(7) Trial: The test phase (trial) is an important part of standard development. In this phase the new goals, content, the methodological/didactical enforceability and necessary framework conditions and facilities can be tested and, if necessary, corrected. In this phase suitable teaching and learning aids can emerge, continuing training events are organised for teachers and trainers, and proposals are developed for efficient enforcement and implementation.

Under certain circumstances a new standard may be introduced immediately without a trial phase. What should be considered here is whether this is an individual, easy to grasp part of the curriculum (module) which has been revised or newly developed (e.g. introduction of a modern technology in a defined area of work). In these cases, the trial phase may be reduced or, following minor adjustments to the standard, may be done away with completely. If, however, an entirely new occupation or an extensive qualification profile is to be introduced, then systematic testing is recommended. Experience has shown that in these cases unforeseen difficulties and mistakes often occur in practice which must be rapidly overcome if the standard is to retain its validity.

In the case of necessary corrections (as a result of trial and evaluation), upholding the validity of the standard must always be borne in mind. Finally, all the young people/adults who are going to be trained first according to the new standard, must be convinced that what they have learned does indeed correspond to the requirements of working life and that the necessary preconditions have been met in the school, enterprise or in the training centre. This stresses once again the need to adopt a very forward looking and critical approach to the development of a standard in order to ensure that the result, the new standard, can be introduced into practice as smoothly as possible.

The trial results should not just be used for the direct optimisation of the corresponding vocational education and training standard but also for general, ongoing improvements in the standard development.

Which steps do you think are superfluous or more or less impracticable?
What would you definitely want to change?
Which institution could assume this task in your country or is already responsible?

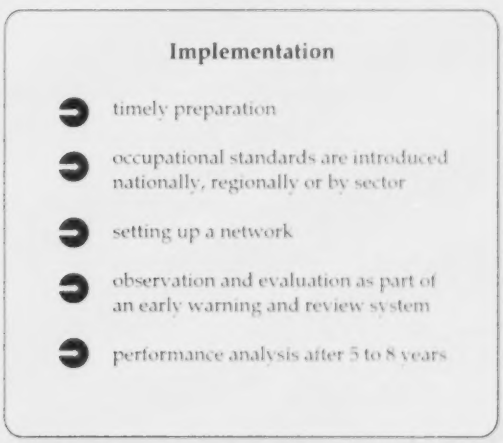
7. Information on implementation, evaluation and compliance with standards (dissemination measures, monitoring, evaluation and quality assurance)

Fig. 9 (p. 23) gives an overview of the different phases of the whole procedure. The following explanations refer to the last three steps; the first is "implementation" (cf. Fig. 11).

➜ **Explanations**:

Already during the trial phase of a new standard, a concept is elaborated for its wide implementation. The final version must be published quickly and everything must be done in order to begin as soon as possible with training in the new occupation or in line with the adapted qualification profile.

Fig. 11: Characteristics of the implementation


Implementation
timely preparation
occupational standards are introduced nationally, regionally or by sector
setting up a network
observation and evaluation as part of an early warning and review system
performance analysis after 5 to 8 years

In this context the "assessment led model", in which only the performance and knowledge to be tested are defined seems to be simpler and more cost saving at first sight. But this really only applies at first sight. There, too, measures have to be taken in the education system to prepare young people and adults for the new assessment requirements..

➜ **Measures for implementation**

The following is recommended:

(1) Extensive information (drawing on all relevant communication opportunities).

(2) Provision of teaching and learning aids for training practice (that begins with concrete curricula and ends with sophisticated learning means).

(3) Staging of technical and didactic seminars for teaching and training staff (here thought should be given to multiplier concepts).

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(4) Support in equipping training institutions with suitable learning hardware (machines, material, PCs etc.) or assistance to overcome shortcomings by establishing regional training centres which can be used by several schools or companies.

(5) Organisation of exchanges of experience, staging of practice-oriented seminars and visits "on site".

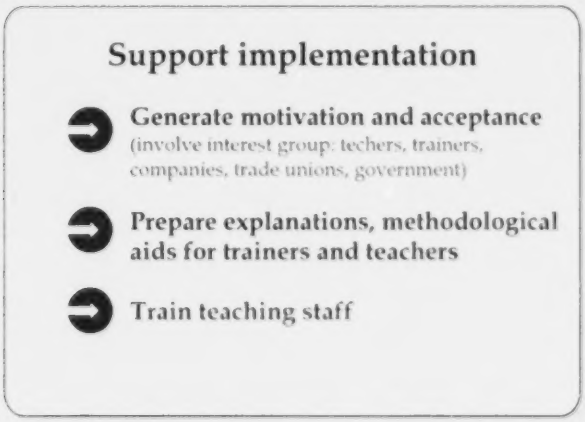
? *What can really be achieved realistically? What should be done at all costs? What were the major problems in your country?*

Generally speaking consideration should be given to the creation of regional networks for standard implementation since mutual support is most easily offered in this manner. Furthermore, information can be circulated more rapidly. Particularly in the case of extensive innovation, it can be assumed that the full implementation of a new standard will take several years. What is meant here by comprehensive implementation is the consistent staging of training in line with the new content and requirements in all relevant training institutions.

➜ NB: Given the relatively long time scale for the dissemination of innovations in education, constant changes and reforms in vocational education and training standards (e.g. change in models) are very difficult for practitioners to deal with. Even if they have accelerated somewhat thanks to new structures and organisation forms, the schools, companies and training centres have their own specific dynamics of change and resistance to change. Continuity and stability are necessary for the functioning of training institutions and for the shaping of effective teaching and learning processes. Both flexibility and stability must be brought into a reasonable balance in order to be able to successfully implement innovation processes.

In principle, however, it can be said that people should be more open to and willing to respond to change than they were in the past (and that applies to all countries, not only in Europe but worldwide). A corresponding attitude must be developed amongst all those concerned and the training institution must be taken and shaped as an open-minded, forward-looking "learning organisation". This also includes preparing the training staff (teachers, trainers), i.e. motivating and training them (cf. Fig. 12).

Fig. 12: Factors which facilitate/encourage the successful dissemination and application of new standards


Support implementation
Generate motivation and acceptance
(involve interest group: techers, trainers, companies, trade unions, government)
Prepare explanations, methodological aids for trainers and teachers
Train teaching staff

➜ Observation, monitoring and process evaluation

The implementation process should be given scientific back up and accompanied by studies in order:

- on the one hand to steer the current process along the lines of ongoing optimisation and to rapidly deal with any difficulties which arise, and
- on the other to obtain general findings about the shaping of the implementation process which can be used for future cases.

It would be particularly beneficial if we were to succeed in creating an **"early warning and review system"** in all countries or at least in a few in order to be informed about developments both:

- on the macro level, i.e. about general economic trends (for instance shifts in business areas, outsourcing of work areas to other countries as a consequence of globalisation), as well as;
- on the micro level, i.e. related to technical and organisational changes in companies (e.g. introduction of new technologies, working patterns, new forms of co-operation with sub-contractors).

This subject was raised in particular at the group meetings in 1996/1997. Against this backdrop the sub-group repeatedly stressed the need for support from European institutions (CEDEFOP, European Training Foundation) and international organisations (OECD).

It should be noted, and the sub-group did refer to this on several occasions, that as a rule not enough back up research is undertaken (this applies to all countries). There are several reasons why this applies even more so to Central and Eastern European countries. Nevertheless, this demand should not be abandoned.

➜ Performance analysis and final evaluation

Performance analysis in practice is the final stage in standard development. A set of criteria is applied in order to determine whether the standard really does what is expected of it. The set of criteria for performance control includes questions like:

- How great is the demand for the new occupation qualification profile or modular package?
- Which learning groups (educational level) are particularly interested in it?
- What difficulties occur in organising the training course, in the examination(s)?
- What employment prospects do graduates have?
- How easy or difficult is transition to the world of work with the qualifications obtained? (How long, for instance, does familiarising take once inside a company?).
- How often is there a change in workplace when holding the qualification (the certificate)? How broad is the spectrum of workplaces for graduates of this training?
- What career advancement prospects are there? How well suited is training according to the new standard as the basis for continuing training?
- How quickly does this new standard become "outdated"?

In order to answer these questions, there must be continuous monitoring of graduates over a period of several years (time series studies). Here, too, an efficient and practical checking (research) instrument must be developed. After a certain time (approximately 5 to 8 years) a final evaluation is undertaken which at the same time constitutes the starting point for a possible new beginning ("updating") of the entire process of standard development. This both concludes and, at the same time, launches the "development cycle".

➜ Control of compliance with the standards

In EU Member States and Central and Eastern Europe, there are different control mechanisms for compliance with vocational education and training standards. Previously, considerable emphasis was given to "control" by supervisory bodies of the state or the chambers but this is no longer the best way. A new form is based on the principle of quality assurance, i.e. quality management which is established in the training institute and is oriented towards that institute itself:

(1) improving the quality of results i.e. a large rate of successful graduates with good work opportunities,

(2) raising the standard of the training process, i.e. guaranteeing or increasing the quality of its own organisation, didactic approaches, training level of staff and equipment (or access to good equipment) and

(3) meeting the requirements of the supervisory authorities (school administration, chambers).

In future, the sub-group believes that keeping the standards will be far more a question of constructively supporting (cf. Fig. 13) rather than exercising control. The implementation and compliance with new vocational education and training standards is an important task of quality management. Approaches of this kind are already widespread in industry. The development in Europe is moving in the direction of improving quality assurance in the education field, too. This is a comprehensive task which all training institutions, whether vocational schools, training companies or training centres, must face.

Fig. 13: Weighing of the factors to guarantee the dissemination and application of the new standard

How can we ensure the consistent application of the standard?

- ☑☑☑ Control of schools/companies
- ☑☑ Continuing training of teaching staff/trainers
- ☑☑ Preparation of application aids (training plans, teaching and learning materials)
- ☑ Appropriate facilities in schools/plants

Modern approach: Quality assurance

8. Examples of standard development in vocational training

The following four examples - the Czech Republic, Slovenia, Latvia and the Ukraine - document in an impressive manner how the results of the Advisory Forum sub-group have been processed and then developed on and implemented in line with the respective expert discussions on the national level and the specificities of the country concerned.

All four examples are based on an updated version of the "occupation model". Information (in some cases very detailed) is always given about content and length, the competencies to be acquired (occupational knowledge and skills, core skills) and general education requirements. Hence, these standards are input and process-oriented. They also lay down the qualifications to be obtained and the assessment requirements, i.e. the output.

The procedure of standard development described in these four examples and the institutions/experts involved reflect the proposals made in the sub-group. In this context, more emphasis is given to the role of the state than to that of the social partners who are still not or cannot be systematically involved in the process for well-known reasons. However, there are country specific differences.

In all countries vocational education and training for skilled manpower (skilled workers, qualified employees, craftspeople, service providers) is considered as one level within the whole vocational education system. There is an option for further qualification on a higher level and this is supported by the opportunity to acquire the university entrance requirement ("matura") combined with vocational education and training ("dual qualification").

The progress made in the approval and implementation of regulations on the further development of standards varies somewhat depending on the political and economic framework conditions in these four countries. Some are already far down the road of implementation, others are now well launched.

8.1 Experience with the development of standards in the Czech Republic[5]

Czech vocational education and training in a period of change

The democratisation process and the related sweeping socio-economic upheaval following the political turnarounds in the Czech Republic also led to major changes in the education and vocational training system.

- Already at the beginning of the 1990's a transformation concept for the reshaping of vocational education and training was developed under the aegis of the Research Institute for Vocational and Technical Training (VUOS) which was not, however, initially officially approved by the government.

5 This contribution is based on an extensive article by the Director of the Institute for Vocational and Technical Education in Prague (CZ) B. Janys, engineer

- At the same time there were a number of spontaneous changes in vocational training practice and these initiatives documented the willingness of the teaching staff to accept reform.

The management and training staff in vocational education and training institutions updated the previous curricula, developed new curricula and occupations and offered flexible training courses. This meant an orientation towards the needs of industry[6] as well as to the wishes of parents and the wishes of young people (e.g. fashionable occupation "manager"). The new private vocational training institutions were particularly active as they did not feel themselves to be bound by the state regulations which still existed.

- As a result of these activities a whole series of highly specialised occupations, curricula and vocational education and training courses emerged which were not always sufficiently thought through and were often of a poor standard because of the inadequate conditions. This meant that at different schools and school levels, training was offered in the same occupations of a differing standard and under a different name. The number of training occupations and specialisations increased to 1,500 (only 256 in 1989).

New vocational education and training standards are to be developed: looking to Europe

In the mid 1990s the Ministry for Education, Youth and Sport (hereinafter referred to as the education ministry) recognised that this new confusing diversity of curricula and new occupations/activities had to be limited and co-ordinated. To that end, new mandatory state vocational education and training standards had to be developed by means of which the quality and comparability of training results could be guaranteed on the national level and, at the same time, greater transparency ensured within the European framework.

➜ In terms of education policy the goal was set that in future on completion of compulsory education, the percentages of the general population (100%) would pursue the following:

- 5% of young people (including the handicapped and disadvantaged) would undergo two-year training for a semi-skilled activity at a vocational school (OU);
- 30-35% would be trained at intermediate vocational schools (SOU) for a period of three years in a skilled worker occupation;
- 45-50% would undergo preparation at intermediate technical schools (SOS) for technical and economic functions in four year "study occupations", whilst at the same time acquiring the subject related university entrance requirement (including a dual qualifying educational course at the level of the skilled worker);
- 15-20% would continue their education at general grammar schools and the new technical or vocational grammar schools and obtain the general university entrance requirement;
- "polytechnics" were to be introduced into the Czech vocational training system for the first time.

These different qualification levels were to be taken into account in a new occupational concept which, at the same time, would guarantee a high level of transfer and progression between the different levels.

6 In order to grasp the scale of developments on the Czech labour and employment market in the last five years, it should be mentioned that one third of all employees were forced to switch to a new activity.

A system of basic/core occupations is introduced

On behalf of the education ministry, a new vocational education and training concept was developed under the aegis of VUOS which led to the introduction of a system of basic or core occupations.

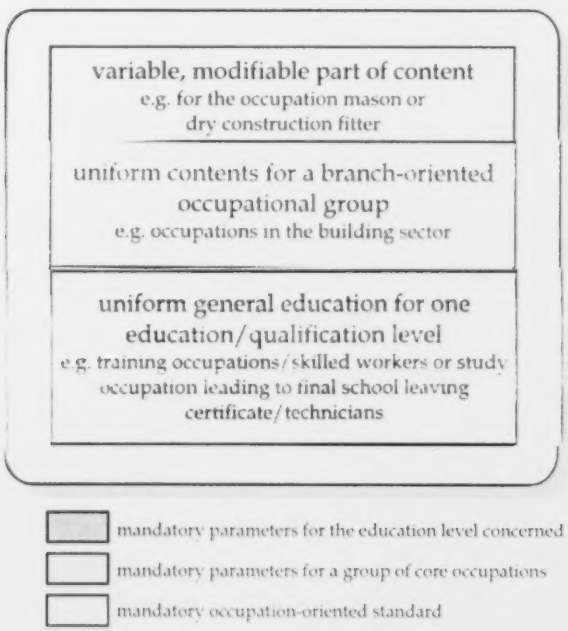
All existing, related and specialised training occupations/areas of activities and study occupations can be classified within the system of basic/core occupations.

➜ For that purpose 26 branch-oriented occupational groups (areas) were formed for the planned elaboration of new mandatory vocational education and training standards (horizontal incorporation of occupations). This includes for example mechanical engineering/iron and steel/foundries, building industry and health sector. Consideration of the four qualification and education levels mentioned within this system smoothes the path to the vertical classification of occupations.[7]

Fig. 14 gives the structure of a basic/core occupation and, by extension, of the new vocational education and training standards in the Czech Republic:

Fig. 14: Structure of a basic occupation

Vocational education and training standard


variable, modifiable part of content
e.g. for the occupation mason or dry construction fitter
uniform contents for a branch-oriented occupational group
e.g. occupations in the building sector
uniform general education for one education/qualification level
e.g. training occupations/skilled workers or study occupation leading to final school leaving certificate/technicians
mandatory parameters for the education level concerned
mandatory parameters for a group of core occupations
mandatory occupation-oriented standard

7 In the new system 137 basic occupations are planned for the first and second training levels, 118 for the third training level (occupations requiring final school leaving certificate) and 60 basic occupations for the fourth level (polytechnic).

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Basic or core curricula - new training concept

➜ The concept of the basic or core occupations is linked to the development of a basic or core curriculum (also described as a national curriculum). The goal is to achieve a completely different approach: "shift away from the school type towards a type of education programme for the four education levels".

Like the basic/core occupation, the new core curriculum also contains a three-tiered structure of training content:

- The generally mandatory content for the two components

  1. "General education"

     Uniform general education for an educational level e.g. training occupation/skilled worker level or study occupation leading to the final school leaving certificate for intermediate technical schools/technician level.

  2. "Initial vocational training"

     Uniform general vocational content for a group of related basic occupations (e.g. in the construction industry.

  The third educational component are the **"occupation specific content"**

  They constitute the variable/adaptable part of a vocational education and training standard and are derived from the requirements for one or more occupations which are learned within the framework of the basic occupation.

  The requirements of the two general mandatory components (general education, initial vocational training) make up the educational standard along with the core skills which are laid down in the basic curriculum.

  The occupation-specific content (third component) carries on from this educational standard. This part of the standard covers the know-how and skills to be obtained in order to pursue an occupation which are integrated into the profile of the trainee (characteristic of the training occupation, examination requirements).

- The **national core** curricula**/standards** may be **supplemented and specified** by the training institutes and schools in line with their own plans and the interests of parents and pupils by means of educational goals. In the same way the occupation-related standard is adapted to the local and regional conditions on the labour market. The consequence will be that the concrete "educational programmes" of the individual pupils will differ from each other but will always contain the requirements of the core curriculum as the mandatory standard.

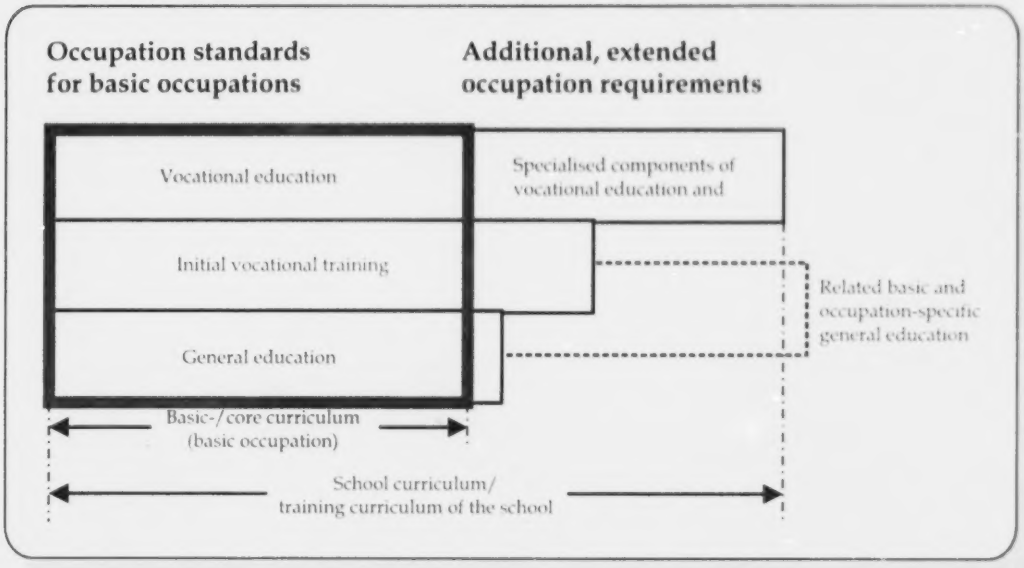
- Existing curricula are allocated to the corresponding basic occupations and assessed according to the three mandatory educational components (criteria).

The new Czech standards should correspond to the European requirements and should be shaped in a transparent and compatible manner.

The **two-tiered system: core curriculum** (developed on the national level) and **school curriculum** (on the school level specific additional concepts, content and educational courses) are presented in Fig. 1.

➜ The concept and system of basic/core occupations, with its education and occupation related target structures in the core curricula has already been developed and was officially approved in January 1998. This means the preconditions have been met for developing new vocational education and training standards on a broad basis.

Fig. 15: Structure of the curricula/educational programmes


Occupation standards for basic occupations
Additional, extended occupation requirements
Vocational education
Initial vocational training
General education
Specialised components of vocational education and
Related basic and occupation-specific general education
Basic-/core curriculum (basic occupation)
School curriculum/ training curriculum of the school

Labour market requirements and international compatibility - important parameters in the development of standards

Under the aegis of VUOS, work on the development of new vocational education and training standards in the Czech Republic has begun and some initial results are already available.

The procedural steps and premises presented in this manual were largely applied. Some of the activities were reduced to what was feasible. For instance the social partners could only be partly involved initially in standard development (formulation of qualification requirements/profile of the graduate, examination requirements, curricular, training preconditions etc.) whereas company representatives were involved to a greater degree. In a few cases competence needs analyses were also conducted. International comparisons of existing occupational characteristics (standards and requirements for more than 200 occupations) were very useful and here direct reference could be made to material from CEDEFOP.

Branch-oriented specialised occupational committees for the development of new vocational education and training standards

➜ In September 1997 the education ministry decided to set up branch-oriented specialised occupational committees/groups (hereinafter referred to as BFK). They will be made up of representatives of the education ministry, employer and employee bodies (chambers, associations, trade unions), experts from universities, schools and companies.

According to the statutes they are to identify the goal/result-oriented requirements of the occupation, the assessment requirements/quality criteria for the pursuit of an occupation and the key areas for the mastering of work tasks (knowledge, know-how, skills) and handle their incorporation into vocational education and training standards. The BFK will put together occupational group-oriented competencies and derive the educational consequences for the standards. The concrete development work for individual occupational areas and training occupations will be undertaken by special expert groups.

➜ VUOS will undertake and co-ordinate this work:

Twenty-six branch-oriented specialised occupational committees will be set up in which approximately 250 experts will work.[8]

VUOS, the co-ordinator, is responsible to the ministry for implementing uniform methods and concepts in the work in the groups. The government will provide funds for this.

Since January 1998 all vocational training documents must be submitted to the education ministry for confirmation, which contain elements of the core curriculum and thus correspond to new vocational education and training standards.

8.2 *Experience in the development of standards in Slovenia*[9]

Reform efforts with an international orientation

The characteristic feature of moves to reform vocational education and training in Slovenia are the considerable efforts to orient themselves towards the standards in force in the European Union and, taking up a historical tradition, to seek proximity to industry in vocational education and training. For a few years now there have been diverse developments in this direction. However a great deal is still in the experimental stage.

Already in the 1970s and 1980s, co-ordinated by the regional employment office of the Republic of Slovenia, new vocational education and training standards were developed for individual branches. They were viewed as the basis for the later development of strategies for (vocational) education, and the development of teaching staff and the labour market.

The decision by the European Board of Statistics (Eurostat) in 1991 stipulated that when developing new vocational education and training standards, consideration should be given to the requirements of the European Union/ISCO-88 (COM)/. An expert team made up of representatives of the National Board of Statistics and the regional employment office put together a comparison of the stipulated classification of occupations and the methodology according to ISCO-1998 and the existing Slovenian classification. The differences identified led to a decision to prepare a new version for Slovenia in line with the new framework conditions.

➜ In 1996 the Slovenian National Council for Statistics, in co-operation with the regional employment office, submitted the draft for a new Occupational Standards Classification. This draft was based on the International Standards Classification of Occupations which aim to promote international (terminological) comparisons/ transparency. For that reason new standards in future are to meet the European requirements (e.g. ISCO-88 and ISCO-88/COM).

The Occupational Standards Classification was developed in co-operation with ministries, public authorities, scientific research institutes, chambers, companies and experts from various areas. The draft does not include any detailed provisions concerning educational strand, curriculum, syllabus but endeavours to establish close links with related occupations/occupational families (horizontal grouping).

8 Half of the experts come from employer or employee bodies (social partners, the others are directors and teaching staff from all types of vocational schools and scientists.) The committees are to be made up of 9 to 15 members and meet no more frequently than every six months.

9 Edited excerpt from a report by Mr. V. Ilalec, Director of the Institute for Vocational Training in Slovenia (source: material from the third meeting of sub-group C, Prague 1997).

The development of the occupation-specific content of training is now the responsibility of specially set up expert teams. The results have to be approved by the Council for Vocational Education and Training of the Republic of Slovenia.

Following a two-year transition period, the Occupational Standards Classification is now going to be introduced as a mandatory document by the government.

Basic characteristics of a vocational education and training standard

In Slovenia, too, vocational education and training standards are structures which link up the requirements of industry and commerce for new knowledge, skills and general competencies of skilled employees with the training curricula. The principles for the preparation of vocational education and training standards are laid down in the law. The Vocational education and training standards are suggested by the chambers (chambers of commerce, chambers of craft trades) and submitted to and implemented by the Ministry of Labour.

Standards have the following components:

- description of typical work sequences within an occupational area,
- occupational complexity level,
- individual occupations from the National Standards Classification (NSC),
- corresponding code in the NSC,
- the required knowledge and skills,
- the description of the training occupation which is learned on the basis of the curriculum (training programme),
- the training level (length of training, description of training level) e.g. higher specialised technical qualification.

The curriculum is target oriented and takes in general information, the type of implementation (school, dual training), goals of training, entry requirements, curriculum, examination requirements, examination catalogues and catalogues of knowledge. The curricula are prepared by the Institute for Vocational Education and Training approved by the expert committee for vocational education and training of the Republic of Slovenia and enforced by the Ministry of Education.

An example of the structure of a vocational education and training standard for training in the occupation "industrial clerk" follows:

The standard for the occupation "industrial clerk" was developed by several branches within the chamber of commerce. The typical tasks were described and the necessary knowledge, skills and general competencies (know-how) were identified and listed. This occupation is classified in the clerk occupational field in the National Standards Classification of Occupations. However, the occupational designation "business technician" was agreed as the training occupation throughout the occupational field.

Several alternatives are envisaged for training for business technicians:

- A curriculum for four-year training in a technical school with short periods of practical training in companies. After the second year the training is broken down into four modules (industry, commerce, bank/insurance, post).
- Differentiated training following training for sales staff (three year training) which leads to a qualification as a business technician in two years (3+2).

- Training in the academy of commerce which lasts five years. This model is based on the Austrian chamber of commerce and offers sound occupational-theoretical training.

The two last forms are currently being tested. At present, this training still gives access to the final school leaving certificate (university entrance requirement). In future, an additional preparatory course for the final school-leaving certificate will be necessary.

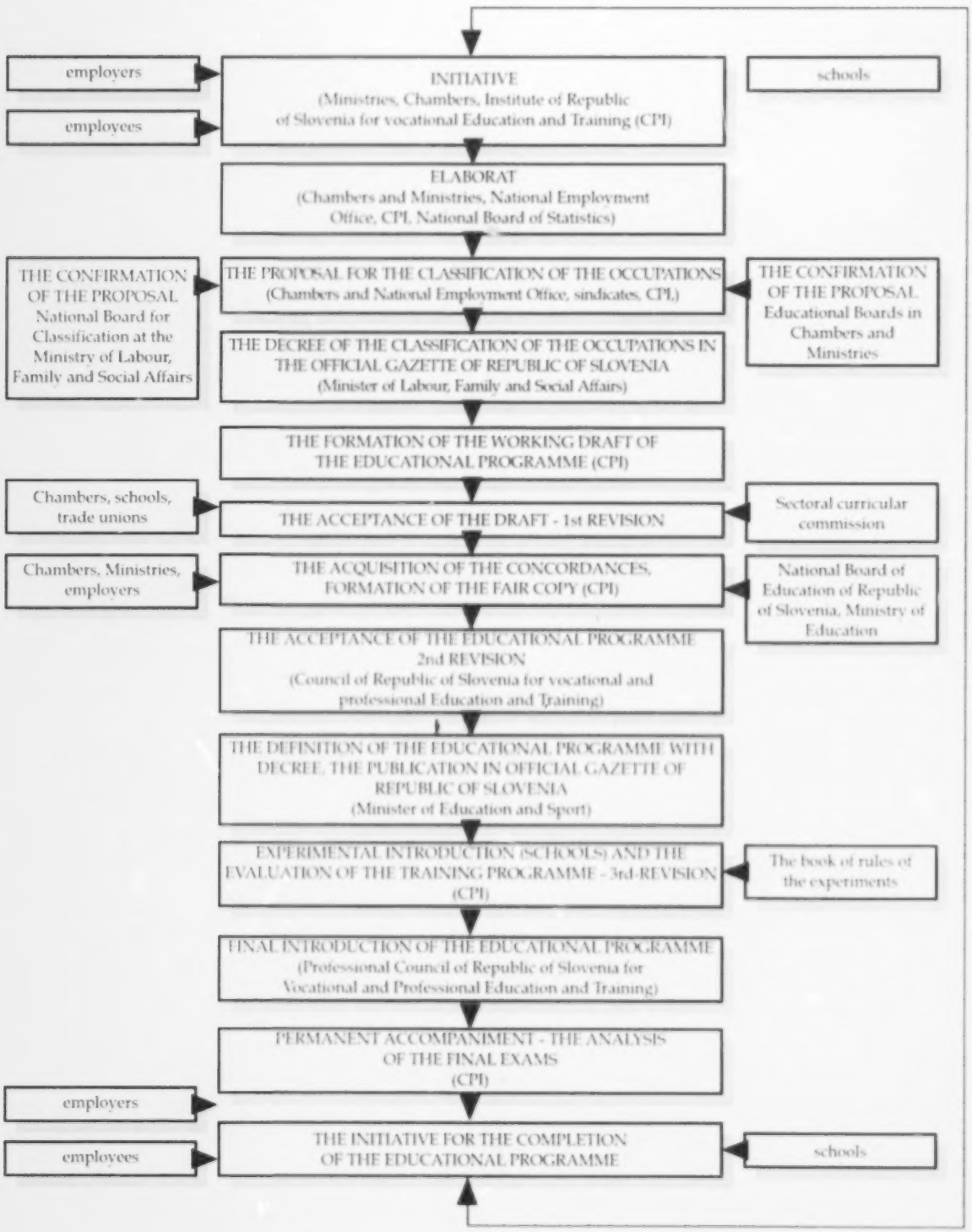
➜ Procedures to develop a vocational education and training standard

The training occupation (occupational designation which is achieved through training) requires the approval of the parity-based Expert Committee for Vocational Education and Training. The methodological guidelines for the preparation of standards were elaborated by experts and approved by the Minister of Labour following consensus with the chambers, the Ministry of Labour and the Ministry of Education.

The training programme/curriculum was developed by experts from the Institute for Vocational Education and Training. Before the curriculum is submitted to the Expert Committee for Vocational Education and Training, it has to be assessed/evaluated externally by independent experts, experts from employers and employees associations - the second review. After approval by the expert committee the curriculum is enforced by an ordinance of the Ministry of Education. Introduction is undertaken on an experimental basis. When testing has been completed for one group, the vocational education and training standard is evaluated, supplemented and definitively introduced.

Fig. 16 (p. 39) presents the procedure adopted in Slovenia for the elaboration, recognition and implementation of vocational education and training standards.

Fig. 16: The formation of vocational education and training standards in Republic of Slovenia


Institute of Republic of Slovenia for Vocational Education and Training
employers
employees
INITIATIVE
(Ministries, Chambers, Institute of Republic of Slovenia for vocational Education and Training (CPI)
schools
ELABORAT
(Chambers and Ministries, National Employment Office, CPI, National Board of Statistics)
THE CONFIRMATION OF THE PROPOSAL National Board for Classification at the Ministry of Labour, Family and Social Affairs
THE PROPOSAL FOR THE CLASSIFICATION OF THE OCCUPATIONS (Chambers and National Employment Office, sindicates, CPI,)
THE CONFIRMATION OF THE PROPOSAL Educational Boards in Chambers and Ministries
THE DECREE OF THE CLASSIFICATION OF THE OCCUPATIONS IN THE OFFICIAL GAZETTE OF REPUBLIC OF SLOVENIA (Minister of Labour, Family and Social Affairs)
THE FORMATION OF THE WORKING DRAFT OF THE EDUCATIONAL PROGRAMME (CPI)
Chambers, schools, trade unions
THE ACCEPTANCE OF THE DRAFT - 1st REVISION
Sectoral curricular commission
Chambers, Ministries, employers
THE ACQUISITION OF THE CONCORDANCES, FORMATION OF THE FAIR COPY (CPI)
National Board of Education of Republic of Slovenia, Ministry of Education
THE ACCEPTANCE OF THE EDUCATIONAL PROGRAMME 2nd REVISION
(Council of Republic of Slovenia for vocational and professional Education and Training)
THE DEFINITION OF THE EDUCATIONAL PROGRAMME WITH DECREE, THE PUBLICATION IN OFFICIAL GAZETTE OF REPUBLIC OF SLOVENIA
(Minister of Education and Sport)
EXPERIMENTAL INTRODUCTION (SCHOOLS) AND THE EVALUATION OF THE TRAINING PROGRAMME - 3rd REVISION (CPI)
The book of rules of the experiments
FINAL INTRODUCTION OF THE EDUCATIONAL PROGRAMME
(Professional Council of Republic of Slovenia for Vocational and Professional Education and Training)
PERMANENT ACCOMPANIMENT - THE ANALYSIS OF THE FINAL EXAMS
(CPI)
employers
employees
THE INITIATIVE FOR THE COMPLETION OF THE EDUCATIONAL PROGRAMME
schools

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8.3 Experience in the development of standards in Latvia[10]

Background

In Latvia, too, the development and implementation of standards in vocational education and training is undergoing change. Many things are still being tested. Several pilot projects are being conducted together with partners from Member States of the European Union which serve the purpose of drawing on the experience of western Europe and achieving greater transparency.

The main goal of the Latvian reform policy in the field of vocational training is to adapt the system to the requirements of a democratic society and market economy. In this context there are many references to rapid economic restructuring. At present, the statutory foundations of training are to be improved. A law on vocational education and training is currently being discussed by the government. This new law may replace the relevant provisions in the Education Act of 1991. This new law aims to harmonise the different types of vocational training and to restructure the various forms of initial and continuing training.

➜ The core of the new law is the national qualification structure for vocational education and training in which a new training model has been integrated. Vocational training consists of various types of programmes on four different levels. These levels correspond to the European SEDOC system. The cabinet of ministers has already confirmed the UNESCO classification of education levels (ISCED) as the basis for classification of educational programmes and the use of this classification for statistical purposes.

Much of this has still to be actually implemented. With respect to the training content a proposal has been made to develop **a uniform system of national occupational and educational standards** which will then define mandatory goals, main tasks and expected outputs for each type, each profile and each level of training as well as the fundamental content and criteria and methods for assessment.

The system could then be used for the accreditation of national training programmes andcurricula developed by schools. Teachers are to bear responsibility for the design of teaching programmes and curricula and for carrying out training in line with the requirements of the national standards. The results will be assessed in "national examinations".[11]

10 Edited contribution by Mrs A. Jorna, Agency for programmes for the development of vocational training in Latvia.

11 For this there is the Phare project "Higher vocational education and training reform in Latvia". It was launched with the aim of supporting the development and implementation of a national strategy for secondary and tertiary education, in particular the development of a methodology for the system of national occupational and educational standards (July 1997). Funds have been earmarked to help a national task force draw up a methodology for a national system of occupational standards compatible with developments in EU Member States. The final report of the task force will contain proposals as to the methods to be used for the development of standards, the division of responsibilities and tasks between the main players involved and the institutional and financial arrangements needed for further implementation. It would also clarify the organisational, managerial and staff implications when developing and maintaining a system of standards.

Occupational and educational standards

The occupational and educational standards were prepared by the task force in the Phare programme "Higher Vocational Education and Training Reform in Latvia". According to this, standards include a general description of tasks to be carried out within the context of the occupation in question as well as a brief outline of the relevant skills and competence. The standards have three functions:

- to ensure links between vocational education and training and business sectors,
- comparability/transparency of various diplomas/certificates,
- guaranteeing the training standard (level, content) as the preconditions for its recognition in different countries.

A distinction is made between two types of standards: "occupational standards" and "educational standards" whereby the educational standards are derived from the occupational standards. The former have two functions. They are:

- to introduce structure into the vocational education and training system and
- to clarify what trainees and the labour markets can expect from an individual vocational training course.

Occupational standards contain:

- entry requirements (previous education),
- a description of the courses,
- examination standards (examination requirements),
- educational tools,
- qualification of training staff

Standards are not eternal. They must prove their worth and be regularly updated. There must be consensus amongst those concerned about standards and their implementations. For a sustainable system of standards an organisational **infrastructure** ("body")[12] is necessary on the national level on which the state, labour market and vocational training are represented. This body will be responsible for:

- developing and recognising occupational standards for every branch,
- developing and recognising standards for individual occupations,
- final vocational assessments which lead to qualification (certificates).

There will be a similar structure on the regional level.

12 This body will be part of the overall vocational training infrastructure which reflects on issues of educational policy and strategy, the viability of training methods and development policy issues. Phare will provide support in the elaboration of a detailed design (concept) for this "body" and its practical establishment.

The development of occupational standards and educational standards (including the assessment requirements) calls for a suitable and transparent **methodology**.

What is required for the **development** of occupational standards is:

- specific (branch) know-how,
- information systems/dynamic database (for development and upgrading).

The **transfer** of occupational standards into educational standards requires:

- specific training/curriculum know how,
- information system-dynamic database (both for development and updating).

The preparation of assessment requirements implies that the four previous steps have been completed.

8.4 *Experience in the development of standards in the Ukraine*[13]

Despite its highly complicated economic and social position and the many unforeseeable factors concerning further development of the country, efforts are still being made in the Ukraine to fundamentally update vocational education and training. There is an increasing orientation towards Europe. Many of the developments described for the Czech Republic, Slovenia and Latvia also apply to the Ukraine which means that here we will only focus on the aspects of special relevance for the Ukraine.

Already at the end of 1995 a presidential decree introduced a **"Commission for the reform of vocational education in the Ukraine"**. In addition to members of parliament and senior civil servants from the various ministries (education, labour, economics, justice and agriculture), it also comprises leading representatives from the regions, vocational school directors and representatives of companies. An important role is also played by the **Institute for pedagogics and psychology of vocational training** at the Academy for pedagogical sciences of the Ukraine. Set up at the end of 1993 it provides scientific back-up for reform and the development of standards.

➜ In December 1997 a new **law came into force "on vocational education"**. This law gives a basic description of the standard concept (Article 33):

> "A state standard of vocational education and training ("vocational and technical education") contains the overall state requirements concerning the content of training, the qualification level of graduates from a vocational school ("vocational and technical teaching institute") and the fundamental compulsory training resources and the educational level of the pupil/graduate. According to this, state standards are developed for each occupation which is contained in the "inventory of occupations for the training of skilled workers in vocational schools".

The components of a state standard for vocational training are:

- the qualification characteristics of the graduates of the vocational school (occupational profile)
- framework syllabi ("type") for the occupations;

13 Edited contribution by A. D. Simak, department for vocational training in the Ministry of Education for the Ukraine.

- framework syllabi (type programmes) for each theoretical subject and for practical training;
- a system for the assessment of knowledge, know-how and skills of trainees and criteria for their assessment (assessment requirements/performance criteria);
- a list of basic mandatory training tools
- the requirements concerning the educational level of the trainee/final school leaving certificate;
- qualification level of the teacher/trainer.

The **qualification characteristic** of the graduate of the vocational school is defined as the overall requirements in respect of occupational knowledge, know-how and skills which are necessary for the successful carrying out of the tasks.

→ The **syllabus/curriculum** for the training of a skilled worker contains:

- requirements in respect of the educational level (general education/final school leaving certificate);
- training goals, knowledge and skills to be acquired (planned competence level at the end of training);
- the mandatory subjects and the related material/subject overview;
- details about training courses;
- examination requirements and
- mandatory training tools

The **curricula** for each of the subjects listed in the syllabi give a detailed description of the content for the knowledge, know-how and skills required.

The syllabi and curricula are developed on the basis of the requirements of the competence characteristics for graduates.

Annex: Sub-group C members (1997)

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